

### **IN THE CLAIMS**

Please amend the claims as follows:

1. (Previously Presented) A computerized method for utilizing a feature diagram in the creation of a potential statechart, comprising:

adding a state to the potential statechart for each state-type feature added to the feature diagram, including the feature diagram modeling a system for controlling semiconductor equipment used to process a Lot of semiconductor wafers;

for each added state-type feature that is an optional feature, adding a decision state to the potential statechart that has a guarded transition to the added state and adding an else transition;

for each alternate relationship to be added to the feature diagram, adding a decision state to the potential statechart and adding a guarded transition from the added decision state to each of the states in the alternate relationship, wherein an else transition is added to the added decision state if the features in the alternate relationship are optional; and

for each or-relationship to be added to the feature diagram, adding a decision state to the potential statechart for each state in the or-relationship, wherein each added decision state has a guarded transition to one of the states in the or-relationship, and each decision state has an else transition.

2. (Previously Presented) The computerized method of claim 1, wherein the potential statechart conforms to the Unified Modeling Language.

3. (Previously Presented) The computerized method of claim 1, wherein the feature diagram models a real-time control system.

4. (Cancelled)

5. (Previously Presented) A computerized method for utilizing a feature diagram in the creation of a potential statechart, comprising:

adding a state to the potential statechart for each state-type feature added to the feature diagram, including the feature diagram modeling a system for controlling semiconductor equipment used to process a Lot of semiconductor wafers;

for each added state-type feature that is an optional feature, adding a decision state to the potential statechart that has one guarded transition to the added state and adding an else transition;

for each alternate relationship to be added to the feature diagram, adding a decision state to the potential statechart and adding a guarded transition from the added decision state to each of the states in the alternate relationship, wherein an else transition is added to the added decision state if the features in the alternate relationship are optional;

for each or-relationship to be added to the feature diagram, adding a decision state to the potential statechart for each state in the or-relationship, wherein each added decision state has a guarded transition to one of the states in the or-relationship, and each decision state has an else transition; and

adding transitions to the potential statechart, wherein the transitions are transitions that are triggered by a signal or stimulus.

6. (Previously Presented) The computerized method of claim 5, wherein the potential statechart conforms to the Unified Modeling Language.

7. (Previously Presented) The computerized method of claim 5, wherein the feature diagram models a real-time control system.

8. (Cancelled)

9. (CURRENTLY AMENDED) A computerized method, comprising:  
creating a feature diagram and a corresponding potential statechart, wherein the feature diagram models a system for controlling semiconductor fabrication equipment;  
modifying the feature diagram, including selecting one or more features from a universe of predefined features; and  
making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart.
10. (Previously Presented) The computerized method of claim 9, wherein the potential statechart conforms to the Unified Modeling Language.
11. (Previously Presented) The computerized method of claim 9, wherein the deterministic statechart conforms to the Unified Modeling Language.
12. (Previously Presented) The computerized method of claim 9, wherein the feature diagram models a real-time control system.
13. (CANCELLED)
14. (Previously Presented) The computerized method of claim 9, wherein computer-executable code is generated as a function of the deterministic statechart.
15. (Previously Presented) The computerized method of claim 9, wherein computer-executable code for a real-time control system is generated as a function of the deterministic statechart.
16. (Previously Presented) The computerized method of claim 9, wherein computer-executable code for a system for controlling semiconductor equipment is generated as a function of the deterministic statechart.

17. (CURRENTLY AMENDED) A method for generating computer-executable code, comprising:
- creating a feature diagram and a corresponding potential statechart, wherein the feature diagram models a system for controlling semiconductor fabrication equipment;
  - modifying the feature diagram, including selecting one or more features from a group of predefined features;
  - making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart; and
  - generating computer-executable code from the deterministic statechart.
18. (Original) The method of claim 17, wherein the potential statechart conforms to the Unified Modeling Language.
19. (Original) The method of claim 17, wherein the deterministic statechart conforms to the Unified Modeling Language.
20. (Previously Presented) The method of claim 17, wherein the feature diagram models a real-time control system.
21. (CANCELLED)
22. (Previously Presented) The method of claim 17, wherein the computer-executable code is generated as a function of the deterministic statechart.
23. (Previously Presented) The method of claim 17, wherein the computer-executable code is for a real-time control system.
24. (Previously Presented) The method of Claim 17, wherein the computer-executable code is for a system for controlling semiconductor equipment.

25. (CURRENTLY AMENDED) A system, comprising:
- one or more feature diagrams, wherein the one or more feature diagram includes one or more features selected from a universe of predefined features, and further wherein the one or more feature diagram model a system for controlling semiconductor fabrication equipment;
- one or more deterministic statecharts generated from the one or more feature diagrams;
- and
- computer-executable code generated from the one or more deterministic statecharts.
26. (Previously Presented) The system of Claim 25, wherein the computer-executable code implements a real-time control system.
27. (CANCELLED)
28. (Original) The system of claim 25, wherein the one or more deterministic statecharts conforms to the Unified Modeling Language.
29. (Previously Presented) The system of claim 25, wherein the one or more feature diagrams model a real-time control system.
30. (Previously Presented) The system of claim 25, wherein the feature diagram models a system for controlling semiconductor equipment.

31. (CURRENTLY AMENDED) A system useful for generating computer-executable code, comprising:

a repository having stored feature diagrams and corresponding potential statecharts, wherein the feature diagrams model a system for controlling semiconductor fabrication equipment; and

an editor capable of making modifications to the stored feature diagrams and capable of making modifications to the potential statecharts that correspond to modifications made to the stored feature diagrams, the editor adapted to allow selection of one or more features to be included in a statechart from a universe of predefined features.

32. (Previously Presented) The system of claim 31, wherein the computer-executable code is implements a real-time control system.

33. (CANCELLED)

34. (Original) The system of claim 31, wherein the stored feature diagrams and corresponding potential statecharts are useful for modeling real-time control systems.

35. (Original) The system of claim 31, wherein the stored feature diagrams and corresponding potential statecharts are useful for modeling a system for controlling semiconductor equipment.

36. (Original) The system of claim 31, wherein the potential statecharts conform to the Unified Modeling Language.

37. (CURRENTLY AMENDED) A system useful for generating computer-executable code, comprising:

a repository having stored feature diagrams and corresponding potential statecharts, wherein the feature diagrams model a system for controlling semiconductor fabrication equipment;

an editor capable of making modifications to the stored feature diagrams and capable of making modifications to the potential statecharts that correspond to modifications made to the stored feature diagrams, the editor adapted to allow selection of one or more features to be included in a statechart from a group of predefined features; and

a code generator for generating computer-executable code from deterministic statecharts.

38. (Previously Presented) The system of claim 37, wherein the computer-executable code implements a real-time control system.

39. (CANCELLED)

40. (Original) The system of claim 37, wherein the potential statecharts and deterministic statecharts conform to the Unified Modeling Language.

41. (Previously Presented) The system of claim 37, wherein the stored feature diagrams model one or more real-time control systems.

42. (Previously Presented) The system of claim 37, wherein the stored feature diagrams model one or more systems for controlling semiconductor equipment.

43. (CURRENTLY AMENDED) A machine-accessible medium having associated content capable of directing the machine to perform a method, the method comprising:

creating a feature diagram and a corresponding potential statechart, wherein the feature diagram models a system for controlling semiconductor fabrication equipment;

modifying the feature diagram, including selecting one or more features from a universe of predefined features; and

making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart.

44. (CURRENTLY AMENDED) A ~~data-signal-representing~~ computer readable medium having computer instructions for causing a computer system to perform a method, the method comprising:

creating a feature diagram and a corresponding potential statechart, wherein the feature diagram models a system for controlling semiconductor fabrication equipment;

modifying the feature diagram, including selecting one or more features from a universe of predefined features; and

making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart.

45. (CURRENTLY AMENDED) A computer-readable medium having computer instructions for performing a method, the method comprising:

creating a feature diagram and a corresponding potential statechart, wherein the feature diagram models a system for controlling semiconductor fabrication equipment used to process a Lot of semiconductor wafers;

modifying the feature diagram, including selecting one or more features from a universe of predefined features; and

making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart.



46. (Previously Presented) The method of claim 9, wherein the universe of predefined features includes one or more required features.
47. (Previously Presented) The method of claim 9, wherein the universe of predefined features include two or more mutually exclusive features.
48. (Previously Presented) The method of claim 9, wherein the universe of predefined features include a group of two or more features, at least one of which must be included in the feature diagram.
49. (Previously Presented) The method of claim 17, wherein the universe of predefined features includes one or more required features.
50. (Previously Presented) The method of claim 17, wherein the universe of predefined features include two or more mutually exclusive features.
51. (Previously Presented) The method of claim 17, wherein the universe of predefined features include a group of two or more features, at least one of which must be included in the feature diagram.